

Application No. 09/350,466

Filed: July 9, 1999

Group Art Unit: 1743

REMARKS

1. This is in response to the Office Action mailed 4/9/02. Claims 21-23, 25-29, 31-34 and 37-46 remain pending in this application.
2. Applicant appreciates the courtesy extended by the Examiner in allowing a telephone interview on 9/19/02. Those present were Examiner LaToya I. Cross, Mark Spitler and Louis Stuhl (the inventors), and Arthur S. Morgenstern (attorney of record). The action taken in this Amendment is consistent with the discussion in the interview.
3. Applicant would like to address several issues raised in the Office Action mailed 4/9/02.
 - a. As a result of the restriction requirement, Applicant has cancelled claims 35 and 36 without prejudice. Applicant reserves the right to prosecute these claims in a divisional application.
 - b. The typographical error relating to Figures 2c and 2d on page 13, line 17 was corrected in the Amendment filed 11/5/01. See page 3, line 8 and page 26, line 6 of the Amendment. See also the discussion in paragraph 4 of the Amendment, on page 20. The typos were corrected by changing the statement to read "Figs. 1c and 1d".
 - c. Note that claims 43-46 were added in the Amendment filed 11/15/01. (See pages 17 and 18; also the comments in paragraphs 2b-d on page 19 therein.) In the Disposition of Claims on the Office Action Summary mailed 4/9/02, claims 24 and 30 were cancelled, but the new claims were not added. Applicant requests

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clarification of the status of these claims. If they have not been previously examined, Applicant requests their examination.

4. Applicant requests reconsideration of the rejections under 35 USC 102 and 103.

a. Applicant encloses the 2 figures used for discussion in the telephone conference and requests that they be entered in the file. As discussed in the conference, claims in the instant application distinguish the instant application from Clement and Burleigh, individually and in combination with each other. Applicant has amended several claims, as discussed in the phone conference and below, to clarify these distinctions.

b. As discussed with the Examiner, Applicant has amended claim 21 to replace "displace" with "desorb" to emphasize the fact that no chemical reaction is taking place with the dye when it is replaced on the solid by the presence of the analytes. Support for the term "desorb" can be found on page 4, line 9 of the application ("competitive dye desorption"). Similar amendments have been made in claims 27, 38, and 44. (Note: in the interview with the Examiner, the amendment of "displaced" to "desorbed" was discussed only in relation to the portion of the claim dealing with second region. However, in the claims amended herein, the amendment in the clause dealing with first region was also made for consistency.)

As discussed in the interview, there is disclosure in the application relating to a possible chemical reaction with the dye after it is displaced from the solid. (See page 5, line 28 - page 6, line 5) This is the basis for the claim language ("or said material capable of producing a radiant energy-detectable material") in claim 21 and other claims. This applies to the case

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where the material is not initially detectable, but, after reaction, is detectable.

c. Applicant has amended claim 32 to specify the sequence of the layers in claim 43. This claim represents the analytical detection element represented by Figure 2 and described on page 13, lines 5-12 of the application. Original claim 9 also provides support for this claim.

d. Applicant has amended claim 31 to indicate that an additional layer or layers can be included in the detection element. Support for this can be found in Figure 3 of the application and on page 12, lines 15-21. (See, especially, "near the top" in line 19.)

5. Enclosed is an Information Disclosure Statement covering references cited for the corresponding EP application.

6. Applicant has enclosed with this submission a Notice of Appeal.

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7. Applicant would appreciate the Examiner's consideration of the above issues. If rejections remain in the application, the Examiner is requested to telephone the undersigned to identify these outstanding issues.

Respectfully submitted,

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MARKED UP VERSION OF CLAIM AMENDMENTS

21. A broad screen analytical detection element, capable of detection of several classes of gas or liquid analytes, said detection element comprising

a first region comprising a solid and adsorbed on said solid a radiant energy-detectable material or a material capable of producing a radiant energy-detectable material, wherein said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material is [displaceable] desorbable by a target analyte; and

a second region for sequestering radiant energy-detectable material

(a) [displaced] desorbed from or

(b) produced by material [displaced] desorbed from said solid prior to detection of said radiant energy-detectable material,

wherein either said first region or said second region further comprises a high boiling plasticizer/solvent.

27. A broad screen analytical detection element, capable of detection of several classes of gas or liquid analytes, said detection element comprising

a first region comprising a solid and adsorbed on said solid a radiant energy-detectable material or a material capable of producing a radiant energy-detectable material, wherein said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material is [displaceable] desorbable by a target analyte; and

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a second region for sequestering radiant energy-detectable material [displaced] desorbed from or produced by material [displaced] desorbed from said solid prior to detection of said radiant energy-detectable material,

wherein said detection element is in the form of multiple small pieces.

31. The analytical detection element of claim [43] 32, wherein said [sample capture layer is near the top of the layer stack of said] detection element contains one or more additional layers.

32. The analytical detection element of claim 43, wherein said [sample capture layer is at the top of the layer stack of] second region is between said first region and said transparent base layer in said detection element.

38. A broad screen method for detection of one or more analytes or classes of analytes, said method comprising the steps of:

providing an analytical detection element, said detection element comprising a solid and adsorbed on said solid a radiant energy-detectable material or a material capable of producing a radiant energy-detectable material, wherein said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material is [displaceable] desorbable by a target analyte;

exposing said analytical detection element to a population of molecules possibly containing said target analytes for a period of time sufficient to permit [displacement] desorption by said target analytes of said radiant energy-detectable material or said

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material capable of producing a radiant energy-detectable material from said solid, wherein said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material [displaced] desorbed by said target analyte is made mobile by the presence of a high boiling plasticizer/solvent;

determining the amount of said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material [displaced] desorbed from said solid; and

correlating the amount of said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material [displaced] desorbed from said solid with the amount of target analyte present in said population of molecules.

correlating the amount of said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material [displaced] desorbed from said molecularly permeable solid with the amount of target analyte present in said population of molecules.

44. A broad screen analytical detection element, capable of detection of several classes of gas or liquid analytes, said detection element comprising a first region comprising

(a) a solid and adsorbed on said solid a radiant energy-detectable material or a material capable of producing a radiant energy-detectable material, wherein said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material is [displaceable] desorbable by a target analyte, and

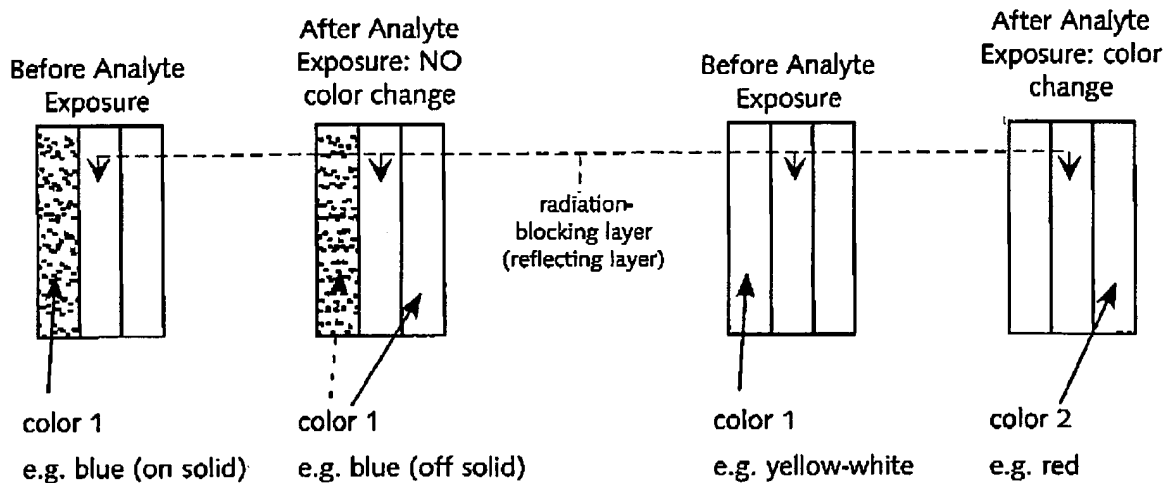
(b) a high boiling plasticizer/solvent.

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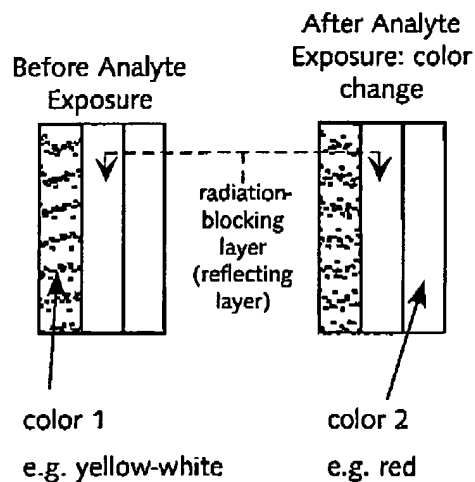
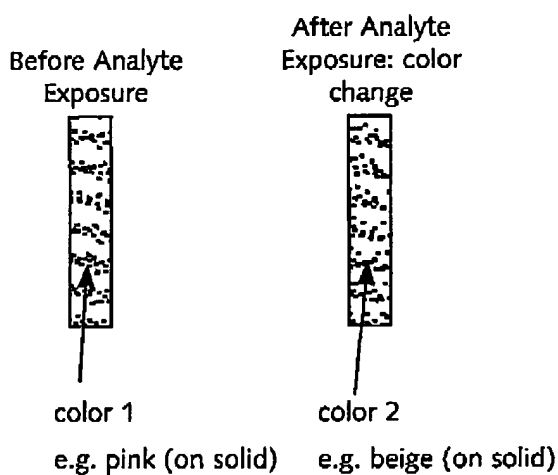
ChemMotif invention: analyte class sensing involves **no** chemical change—solid adsorbent is not merely support for indicator but is fundamental component of detection process

Clement: diffusable species **produced** in sensing layer by interaction with preselected analyte—no solid adsorbent present



Burleigh: analyte **reaction** produces color change; single layer; solid support present but not involved in detection process

Burleigh + Clement: diffusable species **produced** in layer by interaction with preselected analyte—solid adsorbent support present but not involved in detection process



Summary of Detection Mechanisms

reference	movement of indicator	color change	solid present	solid involved in reaction	chemical reaction
instant application	Y	N	Y	Y	N
Clement	Y	Y	N	N	Y
Burleigh	N	Y	Y	N	Y
Burleigh + Clement	Y	Y	Y	N	Y